



Asymmetries in International Trade in Goods Statistics: UK measured against EU partners, 2017 to 2019

About this release

This release includes commentary on the asymmetries between the UK and its EU trading partners. Detailed tables of the asymmetries can be found at www.uktradeinfo.com

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Summary

- The total asymmetry in 2019 between UK-reported arrivals from the EU and EU-reported dispatches to the UK was -€13 billion, with a total absolute asymmetry of €18 billion. In 2017, the asymmetry was -€27 billion, with a total absolute asymmetry of €29 billion; and in 2018 was -€21 billion, with a total absolute asymmetry of €23 billion.
- The total asymmetry in 2019 between UK-reported dispatches to the EU and EU-reported arrivals from the UK was €0.4 billion, with a total absolute asymmetry of €14 billion. In 2017, the asymmetry was -€6.2 billion, with a total absolute asymmetry of €12 billion; and in 2018 was -€3.8 billion, with a total absolute asymmetry of €14 billion.
- The relative asymmetry in 2019 between UK-reported arrivals from the EU and EU-reported dispatches to the UK was -4.3%. The relative asymmetry was -8.8% in 2017 and -6.6% in 2018.
- The relative asymmetry in 2019 between UK-reported dispatches to the EU and EU-reported arrivals from the UK was 0.2%. The relative asymmetry was -3.3% in 2017 and -2.0% in 2018.

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1. Introduction

Asymmetries are the differences between the published trade statistics of the reporting country and its partner countries. Each country collects data on their own international trade-in-goods for both arrivals and dispatches. Theoretically, the 'mirror flow' collected by the partner countries should match, i.e. one country's dispatch should mirror the partner country's arrival. In reality, it is often the case that the figures do not match and this is referred to as an 'asymmetry'.

For example, there may be a difference between what the United Kingdom (UK) records as arrivals from Croatia and what Croatia records as dispatches to the UK. This difference, or 'asymmetry', can be measured. Further information on how asymmetries are measured can be found in Annexe 1: Measures of asymmetry.

There are numerous reasons for the occurrence of asymmetries, such as methodological discrepancies and misclassification of commodities among others. For more information on the causes of asymmetries, see HMRC's 2012 'Overview of Asymmetries' paper which can be found [here](#).

This paper is an asymmetry study covering trade in goods between the UK and EU Member States for the calendar years 2017, 2018, and 2019. The data used in the compilation of this report has been extracted from Eurostat's [Comext database](#). Therefore, all figures are in EUR (€), as provided by Eurostat, for comparability. Additional tables supporting this paper can be found in the accompanying dataset.

International trade-in-goods data detailing trade between the UK and EU Member States are collected via the Intrastat survey and controlled by EU Statistical legislation which aims to harmonise the classification and collection.

There are numerous measurements of asymmetries and in this report we will be using absolute asymmetry, relative asymmetry, and share of total absolute asymmetry. To understand the definitions, calculations, and significance of each of these measurements, please see the explanations provided in Annexe 1.

1.2. Relevant Publications

Both ONS and HMRC are undertaking a series of investigations into asymmetries. Previously published papers in this series are:

- **Article 1** - [Asymmetries in trade data - A UK perspective:](#)
Published on 13th July 2017, by ONS
- **Article 2** - [Trade asymmetries between the UK and EU Member States, 2014 to 2016:](#)
Published on 7th November 2017, by HMRC
- **Article 3** - [Asymmetries in trade data - diving deeper into UK bilateral trade data:](#)
Published on 29th January 2018, by ONS
- **Article 4** - [Asymmetries in international trade in goods statistics: UK measured against its non-EU partners, 2014 to 2016](#)
Published on 15th May 2018, by HMRC
- **Article 5** - [Asymmetries in trade data: extending analysis of UK bilateral trade data](#)
Published on 30th August 2018, by ONS
- **Article 6** - [Asymmetries in international trade in goods statistics: UK measured against its non-EU partners, 2015 to 2017](#)
Published on 13th November 2018, by HMRC
- **Article 7** - [Asymmetries in international trade in goods statistics: UK measured against its non-EU partners, 2015 to 2017](#)
Published on 15th May 2019
- **Article 8** – [Trade asymmetries between the UK and EU Member States, 2015 to 2017](#)
Published on 15th October 2019, by HMRC
- **Article 9** - [Asymmetries in trade data: updating analysis of UK bilateral trade data](#)
Published on 21st February 2020, by ONS
- **Article 10** – [Asymmetries in international trade in goods statistics: UK measured against its non-EU partners, 2016 to 2018](#)
Published on 14th May 2020, by HMRC

2. Trade in goods asymmetries between EU Member States 2017 to 2019

This section explores the asymmetries of each EU Member State by value, comparing each Member State's trade flow against the mirror flow of the remaining 27 Member States. This is shown in the diagram below.



2.1.1. Arrivals: Absolute asymmetries between EU Member States, 2017-19

Graph 2.1.1 shows the absolute asymmetry for arrivals between each EU Member State and the rest of the EU for the years 2017 to 2019.

- France had the largest absolute asymmetry in 2019 at €20 billion. It experienced the 3rd largest increase over the 3 years, up from €18 billion in 2017 and €15 billion in 2018.
- Poland had the 2nd largest absolute asymmetry in 2019 at €14 billion. It experienced the 2nd largest increase over the 3 years, up from €9.2 billion in 2017 and €9.3 billion in 2018.
- The UK had the 3rd largest absolute asymmetry in 2019 at €13 billion. It experienced the largest decrease over the 3 years, down from €27 billion in 2017 and €21 billion in 2018.
- Italy experienced the largest increase in absolute asymmetry over the 3 years, up to €10 billion in 2019 from €4.3 billion in 2017 and €9.2 billion in 2018.
- Belgium experienced the 2nd largest decrease in absolute asymmetry over the 3 years, down to €7.7 billion in 2019 from €12 billion in 2017 and €14 billion in 2018.
- Germany experienced the 3rd largest decrease in absolute asymmetry over the 3 years, down to €2.9 billion in 2019 from €4.7 billion in 2017 and €4.0 billion in 2018.

2.1.2. Arrivals: Relative asymmetries between EU Member States, 2017-19

Graph 2.1.2 shows the relative asymmetries for arrivals between each EU Member State and the remaining Member States for the years 2017 to 2019.

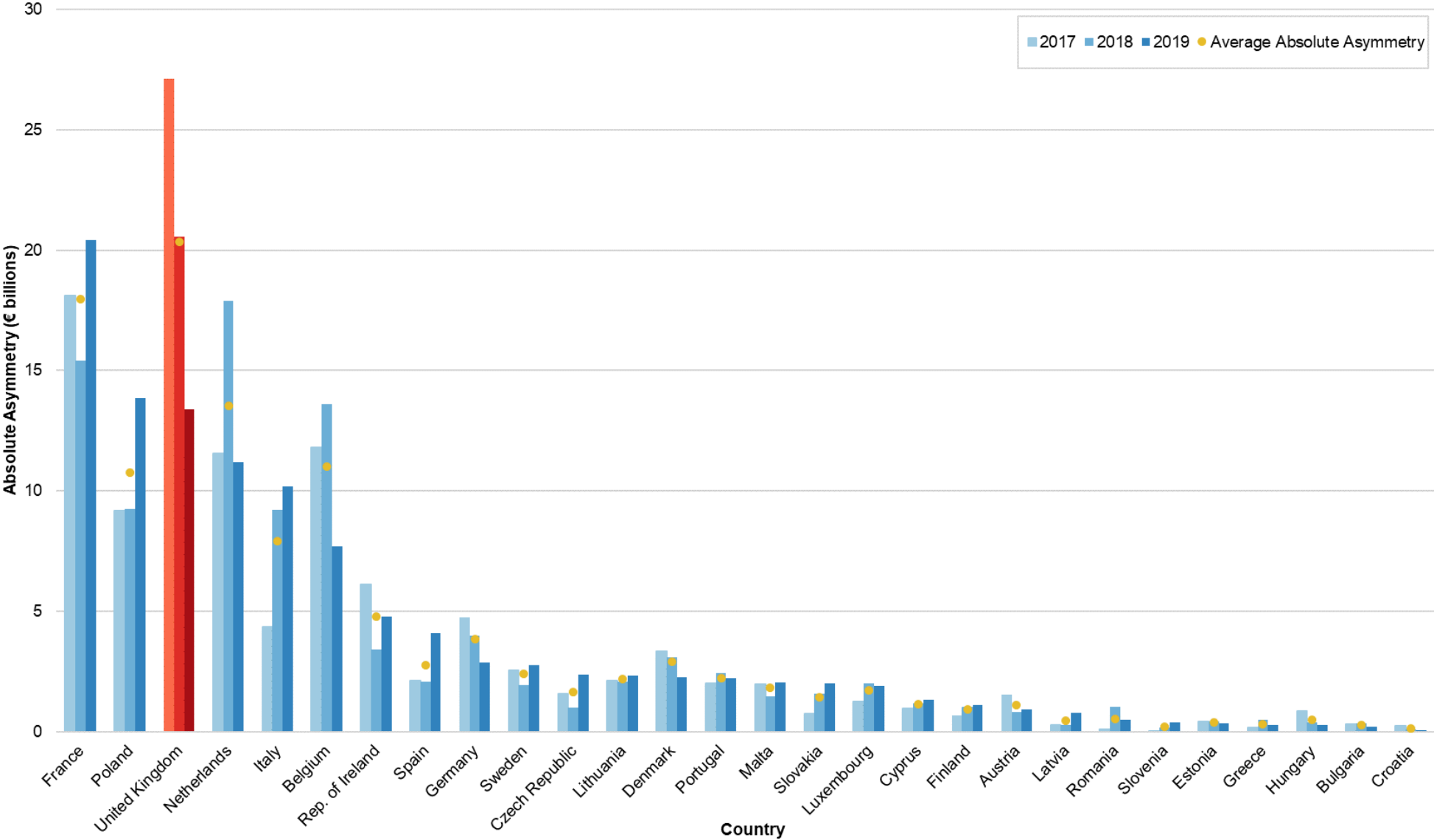
- Malta had the largest relative asymmetry in 2019 at -36%. This was a reduction from -46% in 2017 but a growth from -30% in 2018.
- Cyprus had the 2nd largest relative asymmetry in 2019 at -22%. This was a growth from -18% in 2017 and -20% in 2018.
- The UK saw a notable reduction in its relative asymmetry over the 3 years. It was -8.8% in 2017, which reduced to -6.6% in 2018, and then to -4.3% in 2019.
- Latvia saw a notable growth in its relative asymmetry over the 3 years. It was 2.5% in 2017, initially reducing to 2.1% in 2018, but then growing to 6.2% in 2019.
- The Republic of Ireland saw a notable reduction in its relative asymmetry over the 3 years. It was 12% in 2017, initially reducing to 6.1% in 2018, but then growing to 8.7% in 2019.

2.1.3. Arrivals: Average annual trade value compared with average absolute asymmetry between EU Member States, 2017-19

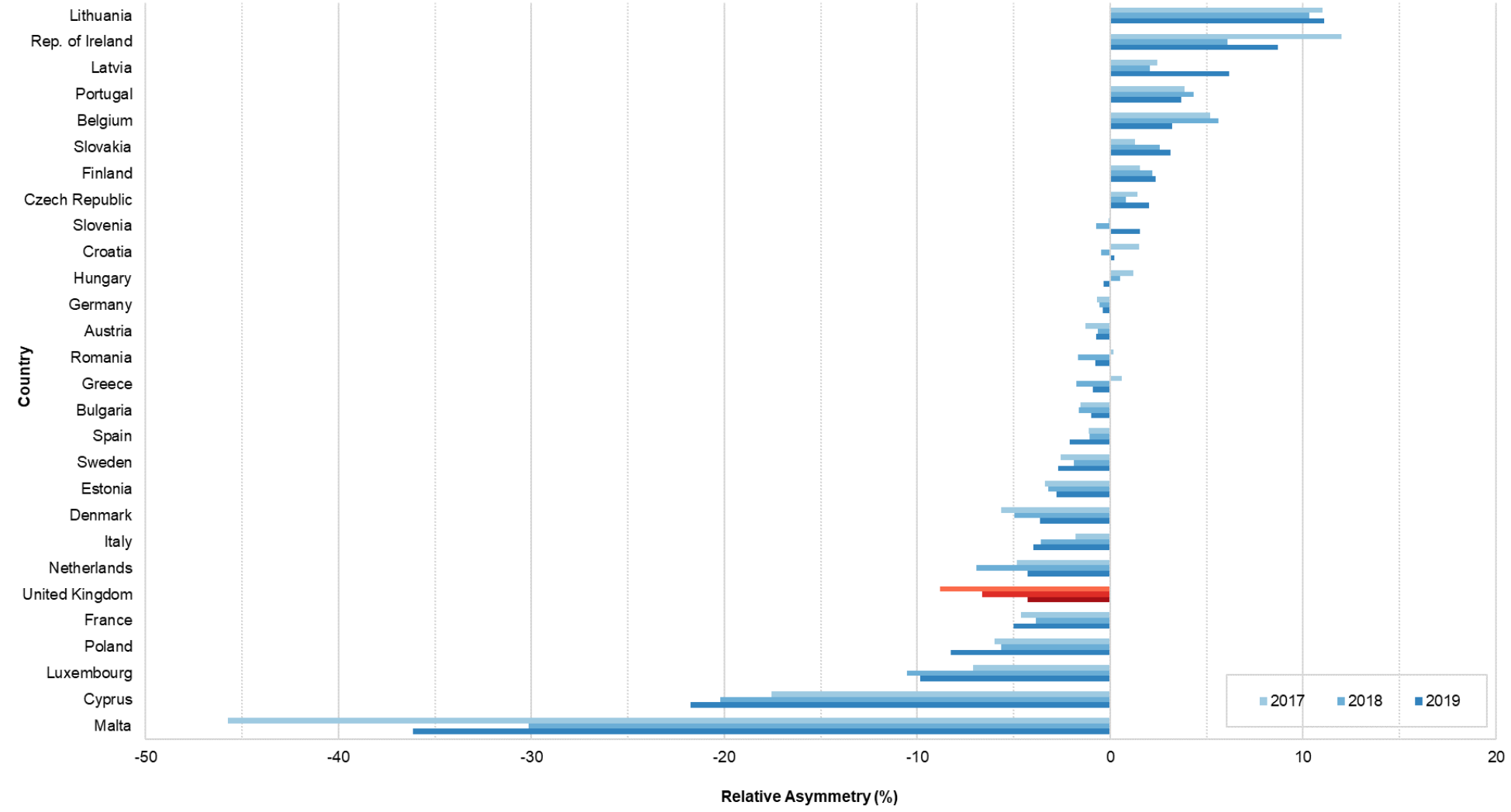
Graph 2.1.3. shows each partner's average share of the total value of arrivals and their average share of the total absolute asymmetry between EU Member States for the years 2017 to 2019.

- Germany had the largest average arrival value and the 8th largest average absolute asymmetry. On average it contributed 21% of the total arrival value (€714 billion) but only 3.3% of the total absolute asymmetry (€3.9 billion).
- France had the 2nd largest average arrival value and the 2nd largest average absolute asymmetry. On average it contributed 11% of the total arrival value (€390 billion) but 16% of the total absolute asymmetry (€18 billion).
- The UK had the 3rd largest average arrival value and the largest average absolute asymmetry. On average it contributed 8.8% of the total arrival value (€300 billion) but 18% of the total absolute asymmetry (€20 billion).
- The Netherlands, on average, contributed 7.2% of the total arrival value (€246 billion) but 12% of the total absolute asymmetry (€14 billion).
- Spain, on average, contributed 5.6% of the total arrival value (€192 billion) but only 2.4% of the total absolute asymmetry (€2.8 billion).
- Poland, on average, contributed 4.6% of the total arrival value (€156 billion) but 9.3% of the total absolute asymmetry (€11 billion).
- Austria, on average, contributed 3.7% of the total arrival value (€125 billion) but only 0.9% of the total absolute asymmetry (€1.1 billion).
- The Republic of Ireland, on average, contributed 1.7% of the total arrival value (€56 billion) but 4.1% of the total absolute asymmetry (€4.8 billion).

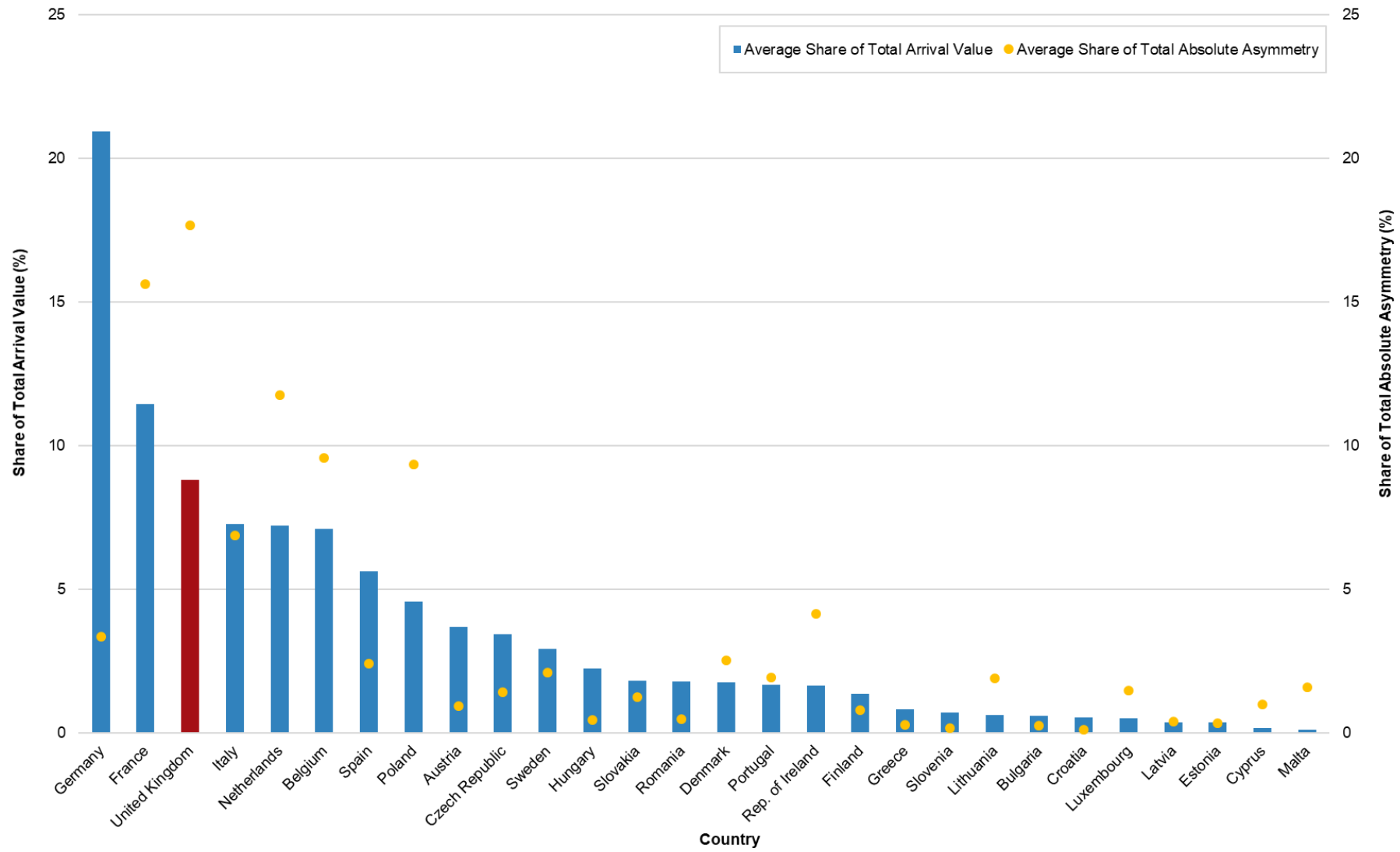
Graph 2.1.1. Arrivals: Absolute asymmetries between EU Member States 2017-19, sorted largest to smallest by 2019 arrival value.



Graph 2.1.2. Arrivals: Relative asymmetries between EU Member States 2017-19, sorted largest positive to largest negative by 2019 arrival value.



Graph 2.1.3. Arrivals: Share of average annual trade value compared with share of average absolute asymmetry between EU Member States 2017-19, sorted largest to smallest by share of average annual trade value.



2.2.1. Dispatches: Absolute asymmetries between EU Member States, 2017-19

Graph 2.2.1 shows the absolute asymmetry for dispatches between each EU Member State and the rest of the EU for the years 2017 to 2019.

- The Netherlands had the largest absolute asymmetry in 2019 at €20 billion. It experienced a decrease over the 3 years, down from €22 billion in 2017, but up from €17 billion in 2018.
- The Republic of Ireland had the 2nd largest absolute asymmetry in 2019 at €13 billion. It experienced the 3rd largest increase over the 3 years, up from €11 billion in 2017 and €8.1 billion in 2018.
- The Czech Republic had the 3rd largest absolute asymmetry in 2019 at €11 billion. It experienced the largest increase over the 3 years, up from €7.9 billion in 2017 and €10 billion in 2018.
- The UK experienced the largest decrease in absolute asymmetry over the 3 years, down to €0.4 billion in 2019 from €6.2 billion in 2017 and €3.8 billion in 2018.
- France experienced the 2nd largest decrease in absolute asymmetry over the 3 years. Its absolute asymmetry was €5.7 billion in 2019, down from €9.6 billion in 2017 but up from €1.4 billion in 2018.
- Slovakia experienced the 2nd largest increase in absolute asymmetry over the 3 years, up to €5.6 billion in 2019 from €3.7 billion in 2017 and €4.6 billion in 2018.
- Germany experienced the 3rd largest decrease in its absolute asymmetry over the 3 years. Its absolute asymmetry in 2019 was €6.2 billion, down from €9.7 billion in 2017 but up from €4.7 billion in 2018.

2.2.2. Dispatches: Relative asymmetries between EU Member States, 2017-19

Graph 2.2.2 shows the relative asymmetries between EU Member States, 2017 to 2019.

- Cyprus had the largest relative asymmetry in 2019 at -41%. This was a reduction from -50% in 2017 and -49% in 2018.
- Malta had the 2nd largest relative asymmetry in 2019 at -38%. This was a growth from -35% in 2017 and 2018.
- Luxembourg saw a notable reduction in its relative asymmetry over the 3 years. It was -19% in 2017, initially growing to -21% in 2018, but then reducing to -14% in 2019.
- Lithuania saw a notable growth in its relative asymmetry over the 3 years. It was -2.0% in 2017, growing to -10% in 2018, but then reducing slightly to -9.0% in 2019.
- Greece saw a notable growth in its relative asymmetry over the 3 years. It was 12% in 2017, initially reducing to 11% in 2018, but then growing to 19% in 2019.
- The UK's relative asymmetry reduced across the 3 years. It was -3.3% in 2017, reducing to -2.0% in 2018 and then reducing in size and changing to a positive relative asymmetry of 0.2% in 2019.

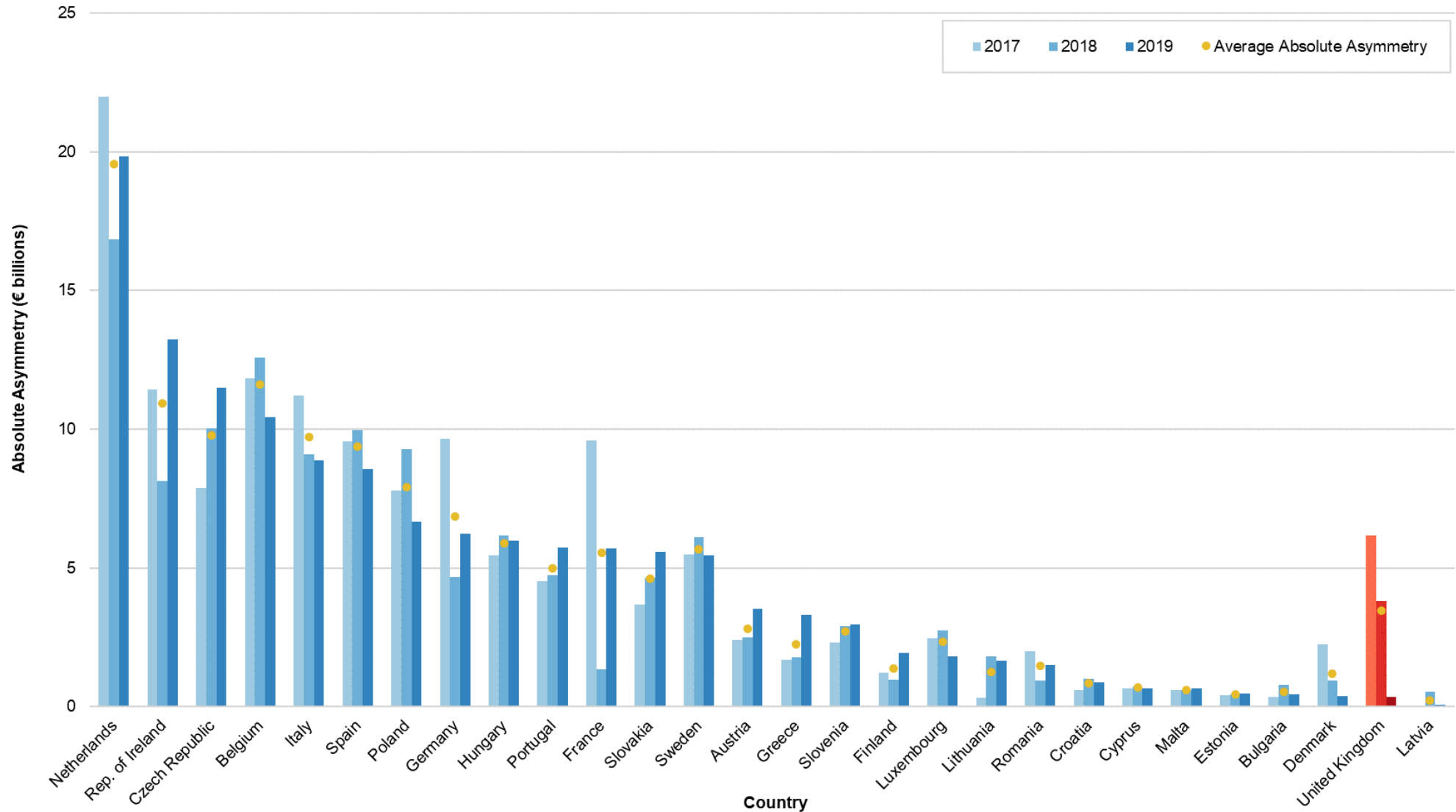
2.2.3. Dispatches: Average annual trade value compared with average absolute asymmetry between EU Member States, 2017-19

Graph 2.2.3 shows each partner's average share of the total value of dispatches and their average share of the total absolute asymmetry between EU Member States for the years 2017 to 2019.

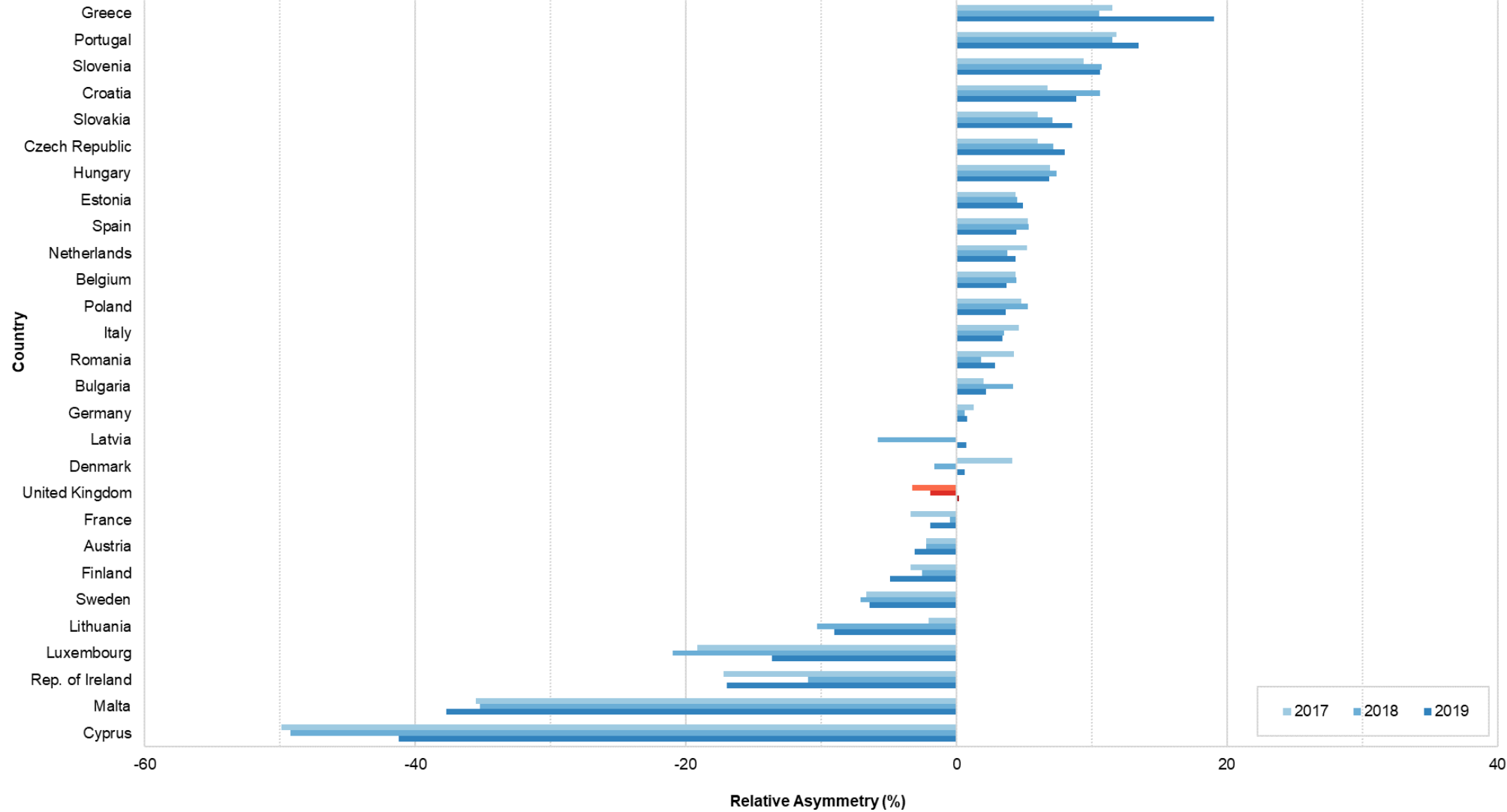
- Germany had the largest average dispatch value and the 8th largest average absolute asymmetry. On average it contributed 22% of the total dispatch value (€768 billion) but only 5.1% of the total absolute asymmetry (€6.9 billion).

- The Netherlands had the 2nd largest average dispatch value and the largest average absolute asymmetry. On average it contributed 13% of the total dispatch value (€450 billion) but 15% of the total absolute asymmetry (€20 billion).
- France had the 3rd largest average dispatch value and the 11th largest average absolute asymmetry. On average, it contributed 8.3% of the total dispatch value (€289 billion) but only 4.1% of the total absolute asymmetry (€5.6 billion).
- The UK, on average, contributed 5.5% of the total dispatch value (€191 billion) but only 2.6% of the total absolute asymmetry (€3.4 billion).
- The Czech Republic, on average, contributed 4.1% of the total dispatch value (€143 billion) but 7.3% of the total absolute asymmetry (€9.8 billion).
- The Republic of Ireland, on average, contributed 1.9% of the total dispatch value (€67 billion) but 8.1% of the total absolute asymmetry (€11 billion).
- Portugal, on average, contributed 1.2% of the total dispatch value (€43 billion) but 3.7% of the total absolute asymmetry (€5.0 billion).

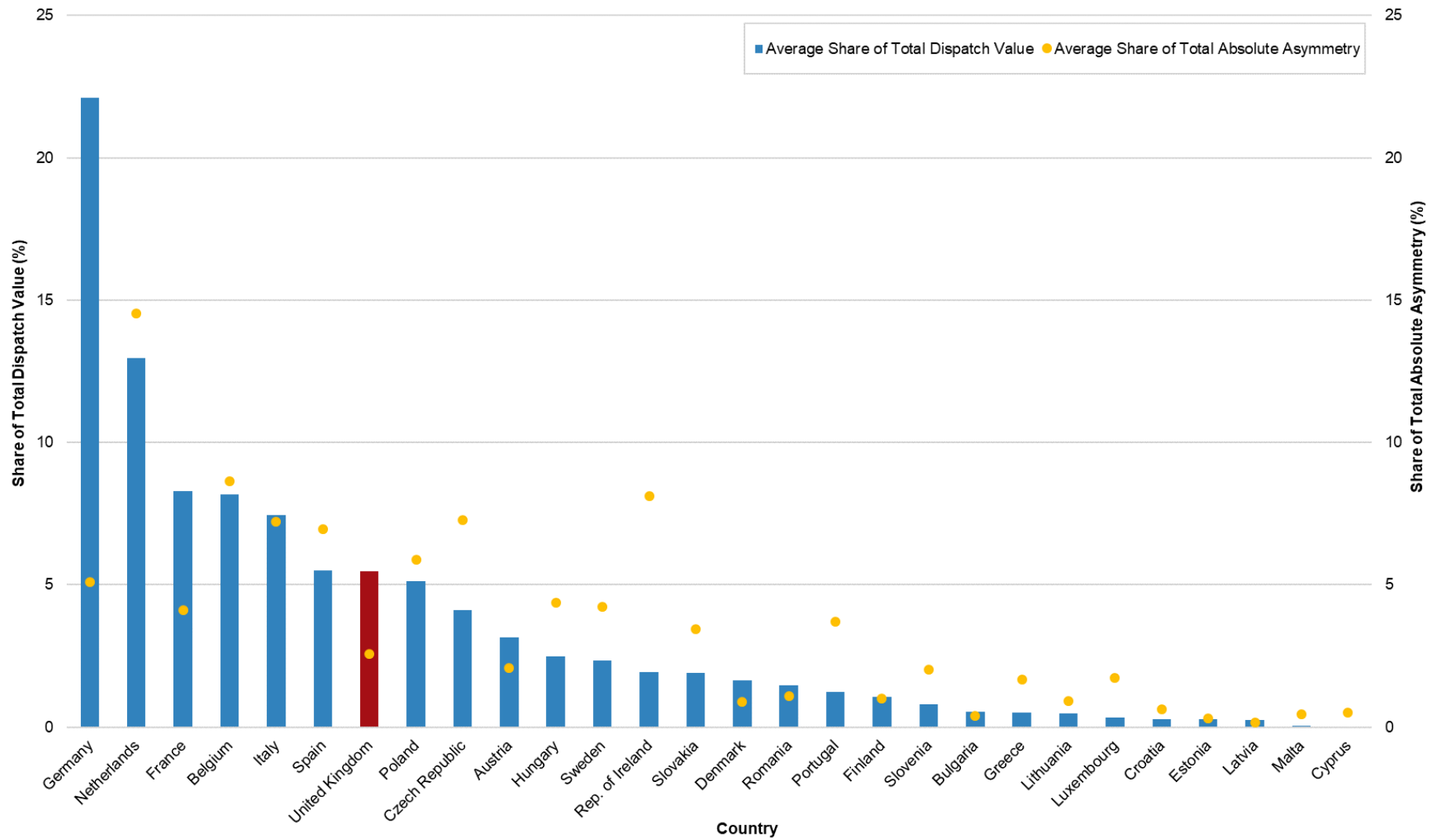
Graph 2.2.1. Dispatches: Absolute asymmetries between EU Member States 2017-19, sorted largest to smallest by 2019 dispatch value.



Graph 2.2.2. Dispatches: Relative asymmetries between EU Member States 2017-19, sorted largest positive to largest negative by 2019 dispatch value.



Graph 2.2.3. Dispatches: Average share of average annual trade value compared with average absolute asymmetry between EU Member States 2017-19.



3. Trade in goods asymmetries between the UK and each EU Member State, 2017 to 2019

This section explores the asymmetries between the UK and each EU Member State. Where the previous section looked at each country and measured the asymmetries between each EU Member State and the EU as a whole, this section is focused on the UK compared with each EU Member State.

3.1.1. Arrivals: The UK's absolute asymmetries with each EU Member State, 2017-19

Graph 3.1.1 shows the absolute asymmetries between UK-reported arrivals from each EU Member State and their reported dispatches to the UK for the years 2017 to 2019.

- In 2017 the UK's total absolute asymmetry for arrivals was €29 billion. In 2018 this decreased to €23 billion. In 2019 it then decreased further to €18 billion.
- The Netherlands had the largest absolute asymmetry with the UK in 2019 at €2.8 billion. It experienced the 2nd largest decrease over the 3 years, down from €5.6 billion in 2017 and €3.3 billion in 2018.
- Germany had the 2nd largest absolute asymmetry with the UK in 2019 at €2.5 billion. It experienced the largest decrease over the 3 years, down from €7.1 billion in 2017 and €4.6 billion in 2018.
- Italy had the 3rd largest absolute asymmetry with the UK in 2019 at €1.8 billion. It experienced a decrease over the 3 years, down from €1.9 billion in 2017 and 2018.
- Slovakia experienced the largest increase in its absolute asymmetry with the UK over the 3 years, up to €1.0 billion in 2019 from €0.6 billion in 2017 and €0.9 billion in 2018.
- Belgium experienced the 3rd largest decrease in its absolute asymmetry with the UK over the 3 years, down to €1.3 billion in 2019 from €2.7 billion in 2017 and €1.8 billion in 2018.
- The Czech Republic experienced the 4th largest decrease in its absolute asymmetry with the UK over the 3 years, down to €1.1 billion in 2019 from €1.7 billion in 2017 and €1.3 billion in 2018.

Table 3.1.1 shows the countries with the largest absolute asymmetries with the UK for 2017, 2018, and 2019. The Netherlands, Germany, and Italy remained in the top 5 through all 3 years.

Table 3.1.1. Arrivals: Top 5 countries by largest absolute asymmetries with the UK, 2017-19

	2017	2018	2019
Rank	Country	Country	Country
1	Germany	Germany	Netherlands
2	Netherlands	Netherlands	Germany
3	Belgium	Spain	Italy
4	Italy	France	Denmark
5	Czech Republic	Italy	Poland

3.1.2. Arrivals: The UK's relative asymmetries with each EU Member State, 2017-19

Graph 3.1.2 shows the relative asymmetries between UK-reported arrivals from each EU Member State and their reported dispatches to the UK for the years 2017 to 2019.

- Malta had the largest relative asymmetry with the UK in 2019 at 60%. It experienced a reduction over the 3 years from 67% in 2017 and 69% in 2018.
- Cyprus had the 2nd largest relative asymmetry with the UK in 2019 at 36%. It experienced a growth over the 3 years from 1.0% in 2017 and 10% in 2018.

- Slovakia had the 3rd largest relative asymmetry with the UK in 2019 at -29%. It experienced a growth over the 3 years from -19% in 2017 and -29% in 2018.
- Denmark experienced notable changes in its relative asymmetry with the UK over the 3 years. It was -26% in 2017 which changed to a positive relative asymmetry of 15% in 2018 and then grew to 21% in 2019.
- Luxembourg also experienced notable changes in its relative asymmetry with the UK over the 3 years. It was -20% in 2017 which changed to a positive relative asymmetry of 1.1% in 2018 and then grew to 10% in 2019.
- Bulgaria experienced a notable reduction in its relative asymmetry with the UK over the 3 years. It was -24% in 2017 which reduced to -19% in 2018 and then further to -2.0% in 2019.
- Croatia also experienced a notable reduction in its relative asymmetry with the UK over the 3 years. It was -44% in 2017 which reduced to -30% in 2018 and then further to -23% in 2019.

Table 3.1.2 shows the countries with the largest relative asymmetries with the UK for 2017, 2018, and 2019. Malta and Croatia remained in the top 5 largest relative asymmetries through all 3 years.

Table 3.1.2. Arrivals: Top 5 countries by largest relative asymmetries with the UK, 2017-19

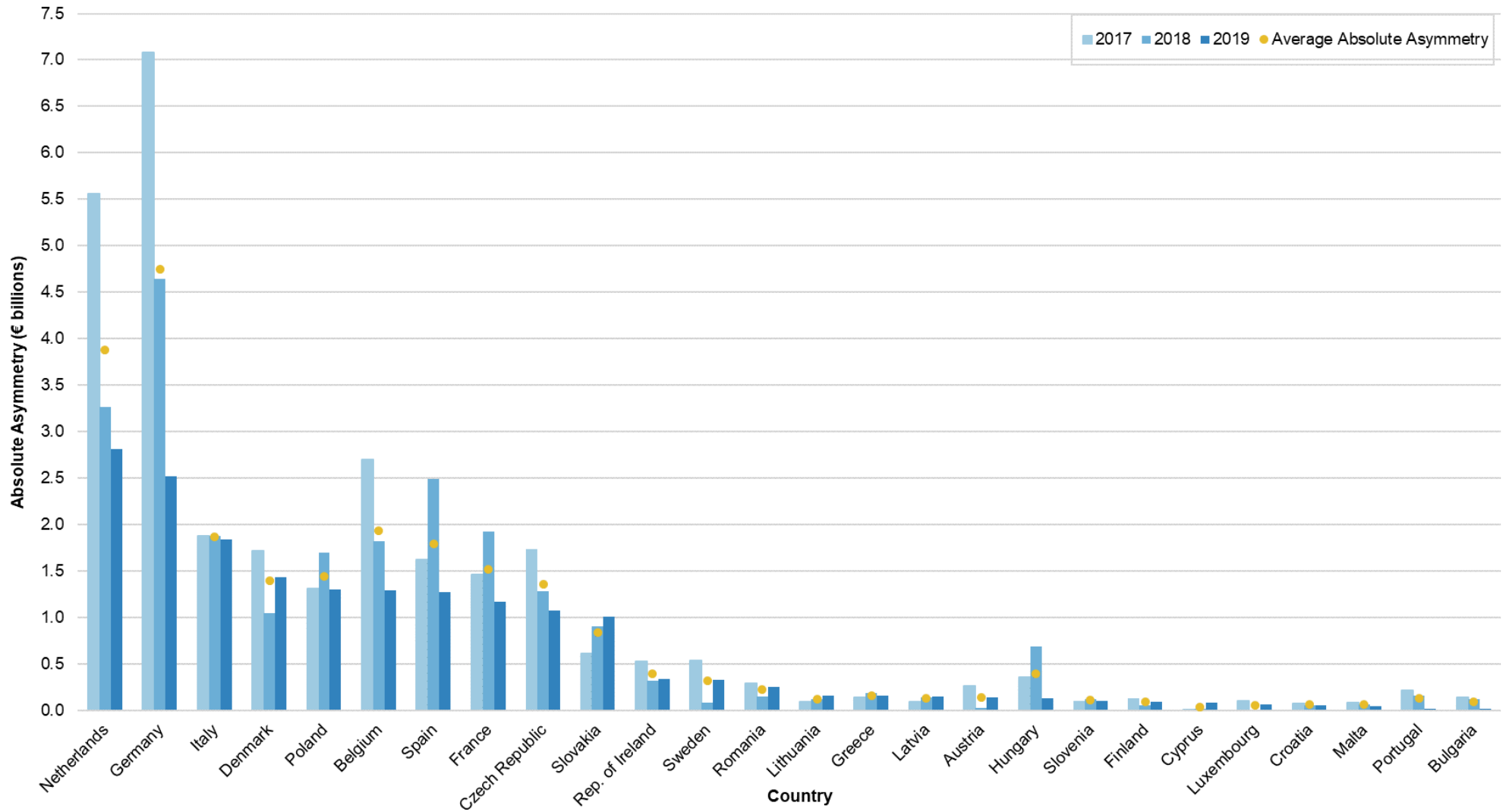
	2017	2018	2019
Rank	Country	Country	Country
1	Malta	Malta	Malta
2	Croatia	Croatia	Cyprus
3	Denmark	Slovakia	Slovakia
4	Czech Republic	Estonia	Croatia
5	Bulgaria	Slovenia	Denmark

3.1.3. Arrivals: Average annual trade value compared with average absolute asymmetry between the UK and each EU Member State, 2017-19

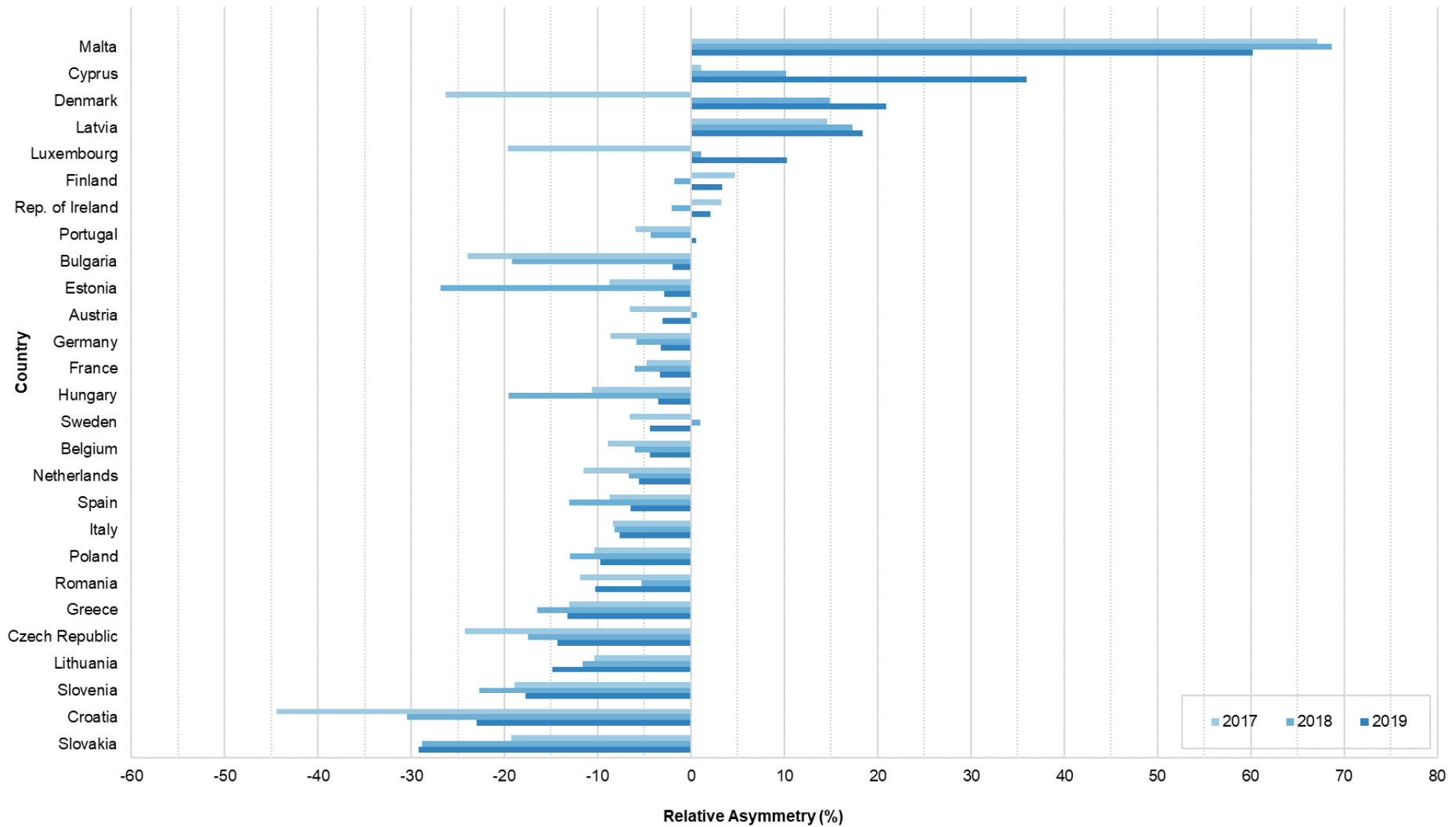
Graph 3.1.3 shows each EU Member State's average share of the total value of UK-reported arrivals and their average share of the total absolute asymmetry for the years 2017 to 2019.

- Germany had the largest average arrival value. On average, it contributed 26% of the total arrival value (€77 billion) but only 20% of the total absolute asymmetry (€4.7 billion).
- The Netherlands had the 2nd largest average arrival value. On average, it contributed 16% of the total arrival value (€47 billion) but 17% of the total absolute asymmetry (€3.9 billion).
- France had the 3rd largest average arrival value. On average, it contributed 11% of the total arrival value (€32 billion) but only 6.5% of the total absolute asymmetry (€1.5 billion).
- Denmark, on average, contributed 2.3% of the total arrival value (€6.9 billion) but 6.0% of the total absolute asymmetry (€1.4 billion).
- The Republic of Ireland, on average, contributed 5.3% of the total arrival value (€16 billion) but only 1.7% of the total absolute asymmetry (€0.4 billion).
- The Czech Republic, on average, contributed 2.2% of the total arrival value (€6.6 billion) but 5.8% of the total absolute asymmetry (€1.4 billion).
- Slovakia, on average, contributed 0.9% of the total arrival value (€2.8 billion) but 3.6% of the total absolute asymmetry (€0.8 billion).

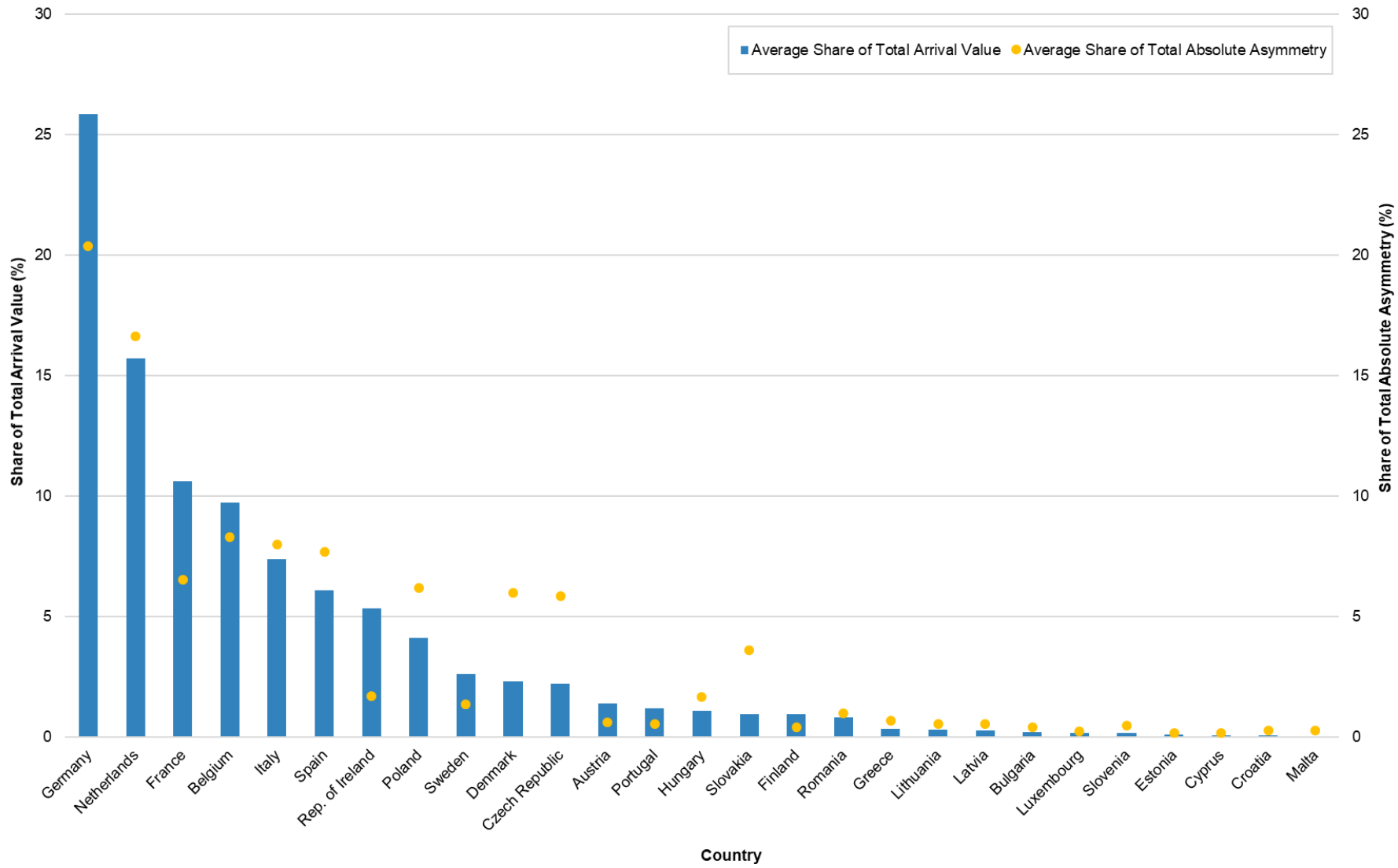
Graph 3.1.1. Arrivals: The UK's absolute asymmetries with the rest of the EU 2017-19, sorted largest to smallest by 2019 arrival value.



Graph 3.1.2. Arrivals: The UK's relative asymmetries with the rest of the EU 2017-19, sorted largest positive to largest negative by 2019 arrival value.



Graph 3.1.3. Arrivals: Share of absolute average annual trade value compared with average absolute asymmetry between the UK and the rest of the EU 2017-19, sorted smallest to largest by share of average annual trade.



3.2.1. Dispatches: The UK's absolute asymmetries with each EU Member State, 2017-19

Graph 3.2.1 shows the absolute asymmetries between UK-reported dispatches to each EU Member State and their reported arrivals from the UK for the years 2017 to 2019.

- In 2017 the UK's total absolute asymmetry for dispatches was €12 billion. This increased to €14 billion in 2018 and 2019.
- France had the largest absolute asymmetry with the UK in 2019 at €4.0 billion. It experienced the largest increase over the 3 years, up from €2.7 billion in 2017 and €3.9 billion in 2018.
- Belgium had the 2nd largest absolute asymmetry with the UK in 2019 at €1.7 billion. It did not change by more than €0.1 billion over the 3 years.
- Germany had the 3rd largest absolute asymmetry with the UK in 2019 at €1.3 billion. It experienced the 2nd largest increase over the 3 years, up from €0.3 billion in 2017 and €0.6 billion in 2018.
- The Netherlands experienced the largest decrease in its absolute asymmetry with the UK over the 3 years, down to €0.4 billion in 2019 from €1.6 billion in 2017 and €0.5 billion in 2018.
- The Czech Republic experienced the 2nd largest decrease in its absolute asymmetry with the UK over the 3 years, down to €0.9 billion in 2019 from €1.6 billion in 2017 and €1.0 billion in 2018.
- Italy experienced the 3rd largest increase in its absolute asymmetry with the UK over the 3 years, up to €0.8 billion in 2019 from €0.1 billion in 2017 and €0.6 billion in 2018.

Table 3.2.1 shows the countries with the largest absolute asymmetries with the UK for 2017, 2018, and 2019. France, Belgium, and the Czech Republic remained in the top 5 through all 3 years.

Table 3.2.1 Dispatches: Top 5 countries by absolute asymmetries with the UK, 2017-19

	2017	2018	2019
Rank	Country	Country	Country
1	France	France	France
2	Belgium	Belgium	Belgium
3	Czech Republic	Spain	Germany
4	Netherlands	Czech Republic	Czech Republic
5	Sweden	Sweden	Austria

3.2.2. Dispatches: The UK's relative asymmetries with each EU Member State, 2017-19

Graph 3.2.2 shows the relative asymmetries between UK-reported dispatches to each EU Member State and their reported arrivals from the UK for the years 2017 to 2019.

- Lithuania had the largest relative asymmetry with the UK in 2019 at -35%. It experienced a reduction over the 3 years from -39% in 2017 and -46% in 2018.
- Austria had the 2nd largest relative asymmetry with the UK in 2019 at -31%. It experienced a growth over the 3 years from -16% in 2017 and -27% in 2018.
- The Czech Republic had the 3rd largest relative asymmetry with the UK in 2019 at -30%. It experienced a reduction over the 3 years from -50% in 2017 and -34% in 2018.
- Malta experienced a notable reduction in its relative asymmetries with the UK over the 3 years. It was 36% in 2017 which reduced to 34% in 2018 and then further to 19% in 2019.
- Slovakia experienced a notable reduction in its relative asymmetries with the UK over the 3 years. It was -32% in 2017 which grew slightly to -34% in 2018 and then decreased to -15% in 2019.

- Bulgaria experienced notable changes in its relative asymmetry with the UK over the 3 years. It was 8.4% in 2017 which reduced to 1.4% in 2018 and then changed to a negative asymmetry of -6.5% in 2019.
- Portugal experienced a notable growth in its relative asymmetry with the UK over the 3 years. It was -3.9% in 2017 which grew to -5.8% in 2018 and then grew further to -15% in 2019.

Table 3.2.2 shows the countries with the largest relative asymmetries with the UK for 2017, 2018, and 2019. Lithuania, the Czech Republic, and Estonia remained in the top 5 largest relative asymmetries through all 3 years.

Table 3.2.2. Dispatches: Top 5 countries by largest relative asymmetries with the UK, 2017-19

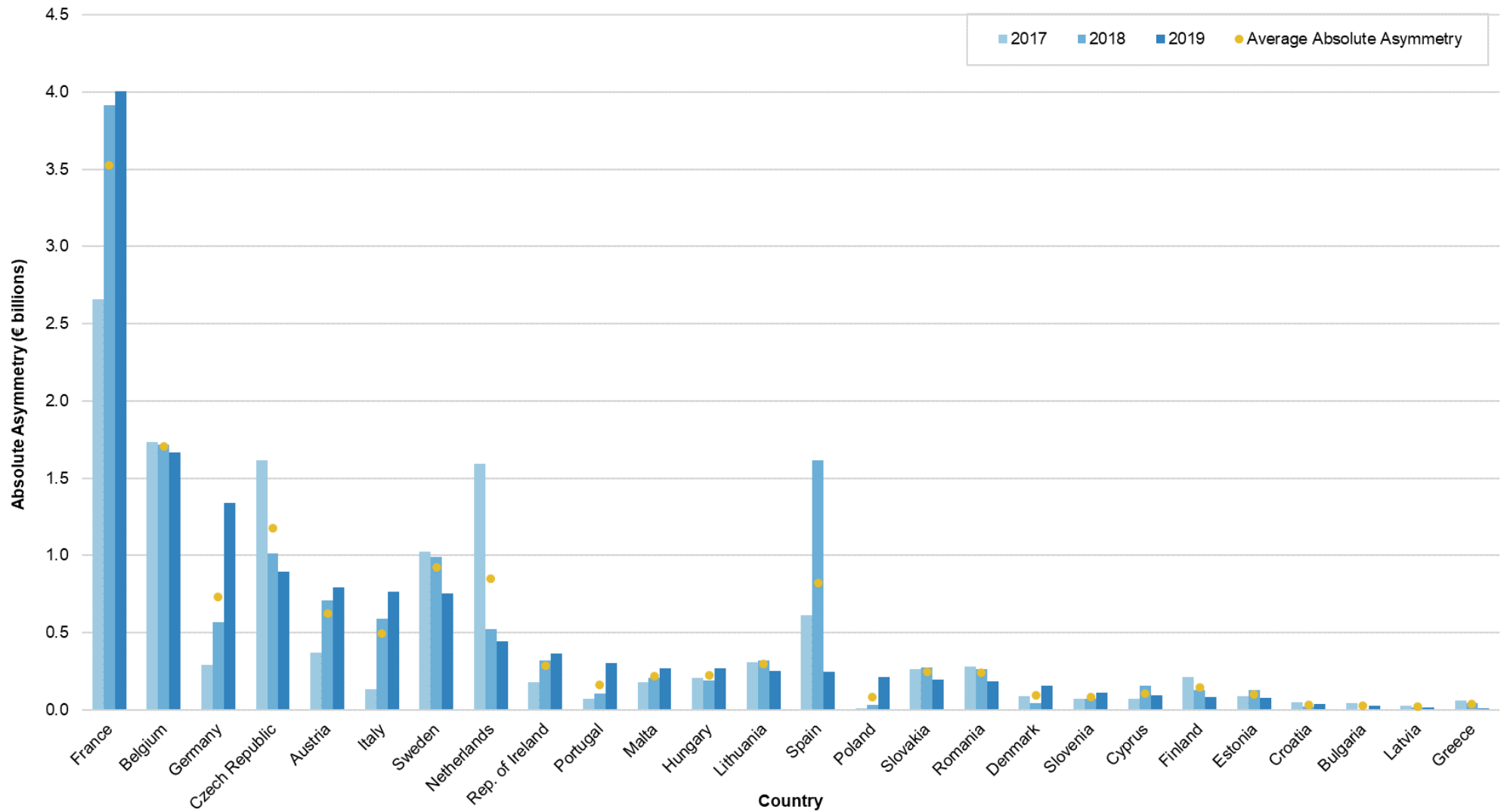
	2017	2018	2019
Rank	Country	Country	Country
1	Czech Republic	Lithuania	Lithuania
2	Lithuania	Estonia	Austria
3	Malta	Czech Republic	Czech Republic
4	Slovakia	Malta	Slovenia
5	Estonia	Slovakia	Estonia

3.2.3. Dispatches: Average annual trade value compared with average absolute asymmetry between the UK and each EU Member State, 2017-19

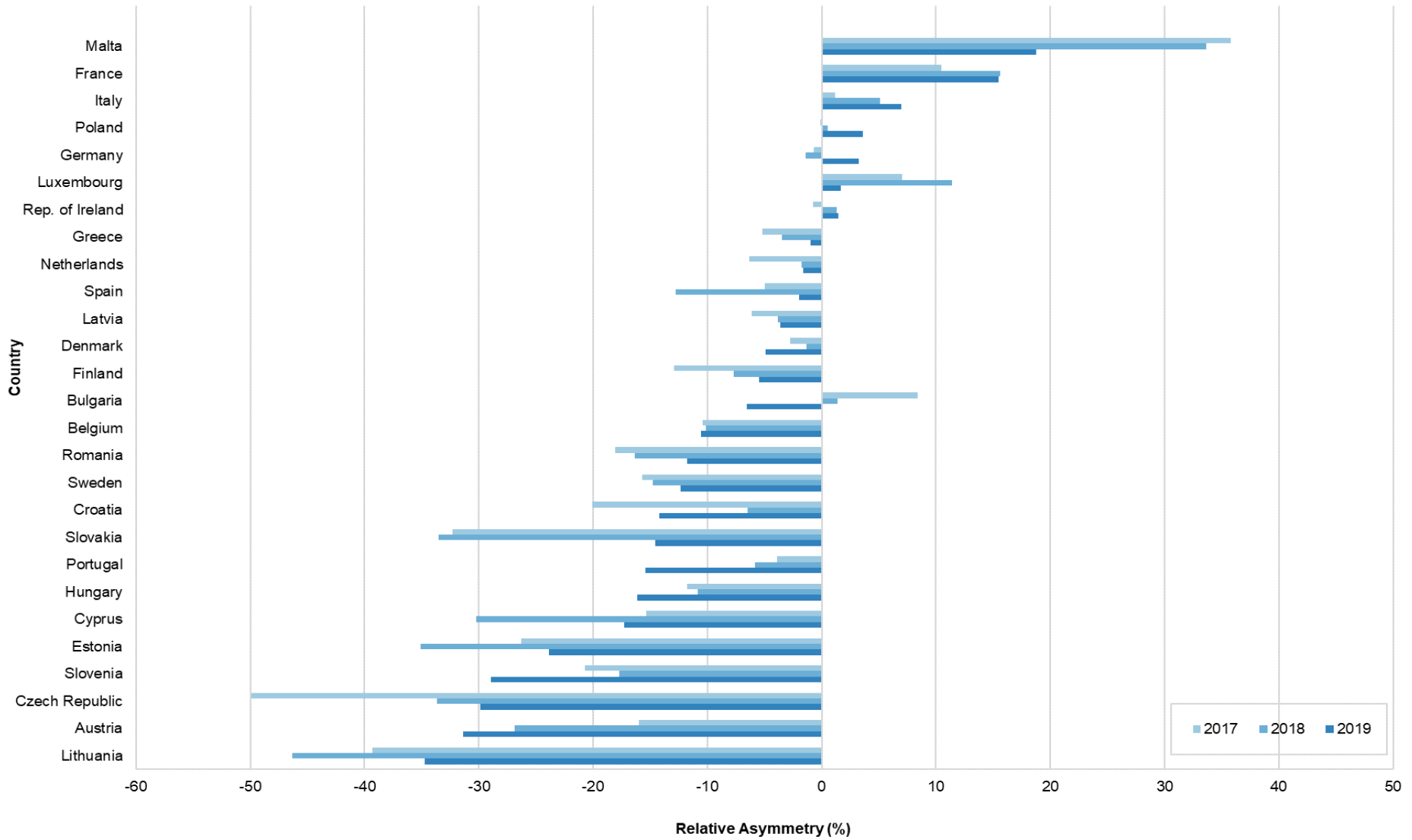
Graph 3.2.3 shows each EU Member State's average share of the total value of UK-reported dispatches and their average share of the total absolute asymmetry for the years 2017 to 2019.

- Germany had the largest average dispatch value. On average, it contributed 22% of the total dispatch value (€41 billion) but only 5.5% of the total absolute asymmetry (€0.7 billion).
- France had the 2nd largest average annual dispatch value. On average, it contributed 14% of the total dispatch value (€27 billion) but 27% of the total absolute asymmetry (€3.5 billion).
- The Netherlands had the 3rd largest average annual dispatch value. On average, it contributed 14% of the total dispatch value (€27 billion) but only 6.4% of the total absolute asymmetry (€0.9 billion).
- The Republic of Ireland, on average, contributed 12% of the total dispatch value (€24 billion) but only 2.2% of the total absolute asymmetry (€0.3 billion).
- Belgium, on average, contributed 8.2% of the total dispatch value (€16 billion) but 13% of the total absolute asymmetry (€1.7 billion).
- Sweden, on average, contributed 3.1% of the total dispatch value (€6.0 billion) but 6.9% of the total absolute asymmetry (€0.9 billion).
- The Czech Republic, on average, contributed 1.3% of the total dispatch value (€2.5 billion) but 8.8% of the total absolute asymmetry (€1.2 billion).

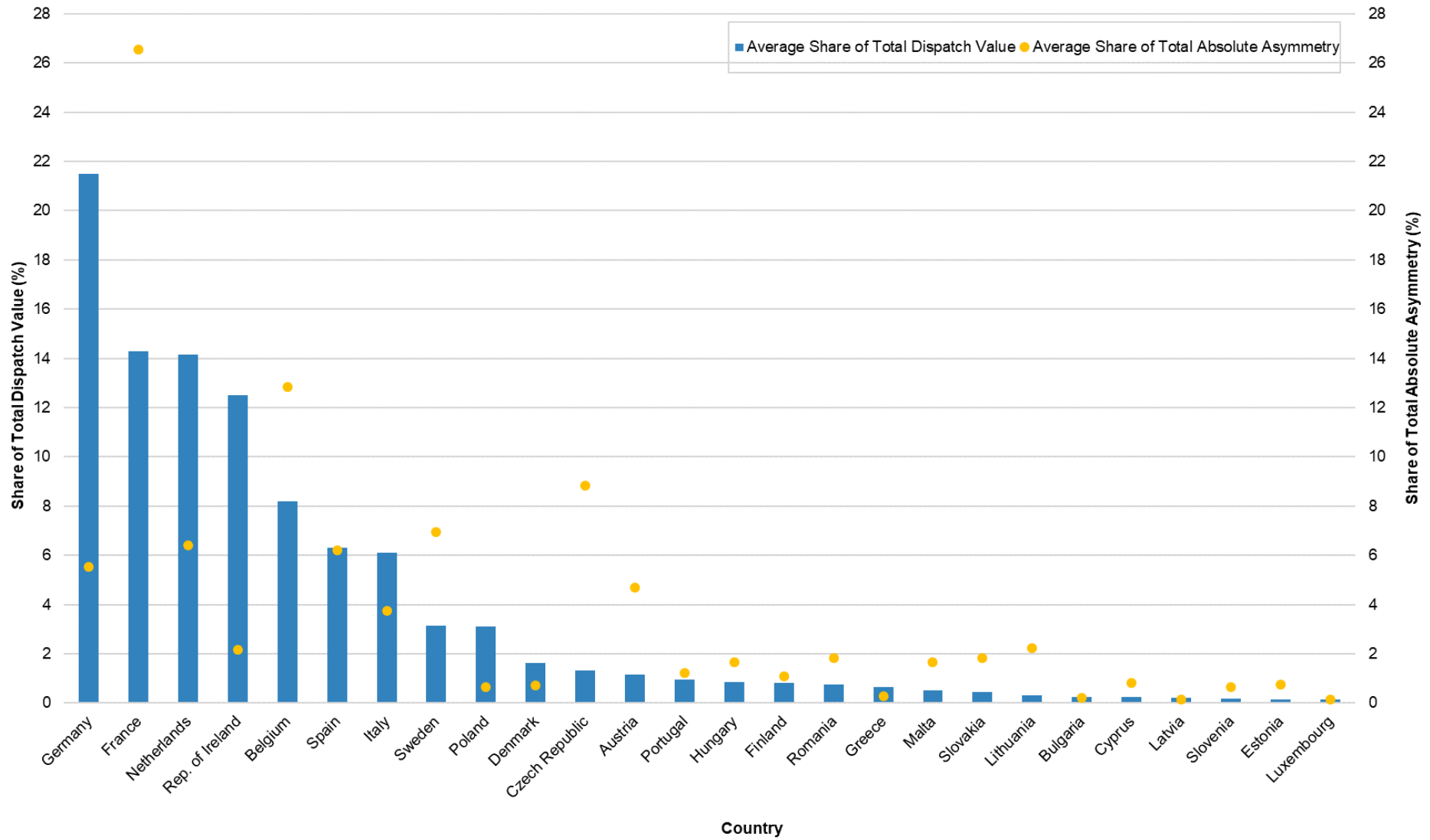
Graph 3.2.1. Dispatches: The UK's absolute asymmetries with the rest of the EU 2017-19, sorted largest to smallest by 2019 dispatch value.



Graph 3.2.2. Dispatches: The UK's relative asymmetries with the rest of the EU 2017-19, sorted largest positive to largest negative by 2019 dispatch value.



Graph 3.2.3. Dispatches: Share of average annual trade value compared with average absolute asymmetry between the UK and the rest of the EU 2017-19, sorted largest to smallest by share of average annual trade value.



4. A chapter breakdown of trade in goods asymmetries between the UK and the rest of the EU, 2017 to 2019

4.1.1. Arrivals: The UK's absolute asymmetries with the rest of the EU by chapter, 2017-19

Graph 4.1.1 shows the absolute asymmetries between the UK and the rest of the EU for the 10 chapters with the largest absolute asymmetries in 2019.

- The total absolute asymmetry for all chapters was €29 billion in 2017 and 2018. In 2019 this decreased to €19 billion.
- Chapter 85 (Electronic equipment) had the largest absolute asymmetry in 2019 at €2.7 billion. It experienced the 2nd largest decrease over the 3 years, down from €4.6 billion in 2017 and €3.3 billion in 2018.
- Chapter 84 (Mechanical appliances) had the 2nd largest absolute asymmetry in 2019 at €2.6 billion. It experienced the 3rd largest decrease over the 3 years, down from €4.1 billion in 2017 and €4.4 billion in 2018.
- Chapter 73 (Articles of iron or steel) had the 3rd largest absolute asymmetry in 2019 at €1.6 billion. It experienced the largest increase over the 3 years, up from €0.5 billion in 2017, though it is down from €1.8 billion in 2018.
- Chapter 87 (Motor vehicles) experienced the largest decrease in absolute asymmetry over the 3 years, falling out of the top 10 in 2019 at €0.1 billion. This was down from €3.1 billion in 2017 and €1.1 billion in 2018.
- Chapter 88 (Aircraft) experienced the 4th largest decrease in absolute asymmetry over the 3 years, down to €0.9 billion in 2019 from €1.4 billion in 2017 and €1.2 billion in 2018.

Table 4.1.1 shows the 10 chapters with the largest absolute asymmetries for 2017, 2018, and 2019. There were 4 chapters consistently in the top 10 through all 3 years, which were 85 (Electronic equipment), 84 (Mechanical appliances), 90 (Measuring devices and gauges), and 88 (Aircraft).

Table 4.1.1. Arrivals: Top 10 chapters by largest absolute asymmetries, 2017-19

	2017	2018	2019
Rank	Chapter	Chapter	Chapter
1	85	84	85
2	84	85	84
3	87	73	73
4	88	88	90
5	90	30	88
6	94	27	29
7	89	87	76
8	61	90	30
9	86	76	94
10	27	39	71

4.1.2. Arrivals: The UK's relative asymmetries with the rest of the EU by chapter, 2017-19

Graph 4.1.2 shows the relative asymmetries between the UK and the rest of the EU for the 10 chapters with the largest relative asymmetries in 2019.

- Chapter 14 (Other vegetable products) had the largest relative asymmetry in 2019 at 77%. This reduced over the 3 years from -102% in 2017, though it grew from -64% in 2018.
- Chapter 66 (Umbrellas) had the 2nd largest relative asymmetry in 2019 at -60%. This reduced over the 3 years from -64% in 2017 and -74% in 2018.
- Chapter 26 (Ores) had the 3rd largest relative asymmetry in 2019 at 47%. This reduced from 48% in 2017, though it grew from 29% in 2018.
- Chapter 89 (Ships, boats, and floating structures) experienced a notable reduction in its relative asymmetry over the 3 years. It was -80% in 2017 which reduced to -70% in 2018, and then further to -34% in 2019.
- Chapter 73 (Articles of iron or steel) experienced a notable change in its relative asymmetry over the 3 years. It was -9.8% in 2017 which changed to a positive relative asymmetry of 31% in 2018 and then reduced slightly to 29% in 2019.
- Chapter 80 (Tin and articles thereof) experienced a notable growth in its relative asymmetry over the 3 years. It was 0.2% in 2017 which grew to 13% in 2018 and then further to 39% in 2019.

Table 4.1.2 shows the 10 chapters with the largest relative asymmetries for 2017, 2018, and 2019. There were 4 chapters consistently in the top 10 through all 3 years, which were 14 (Other vegetable products), 66 (Umbrellas), 93 (Arms and ammunition), and 89 (Ships, boats, and floating structures).

Table 4.1.2. Arrivals: Top 10 chapters by largest relative asymmetries, 2017-19

Rank	2017	2018	2019
	Chapter	Chapter	Chapter
1	14	66	14
2	89	93	66
3	66	89	26
4	63	97	93
5	46	14	50
6	86	86	80
7	26	63	97
8	93	45	89
9	47	67	05
10	05	03	73

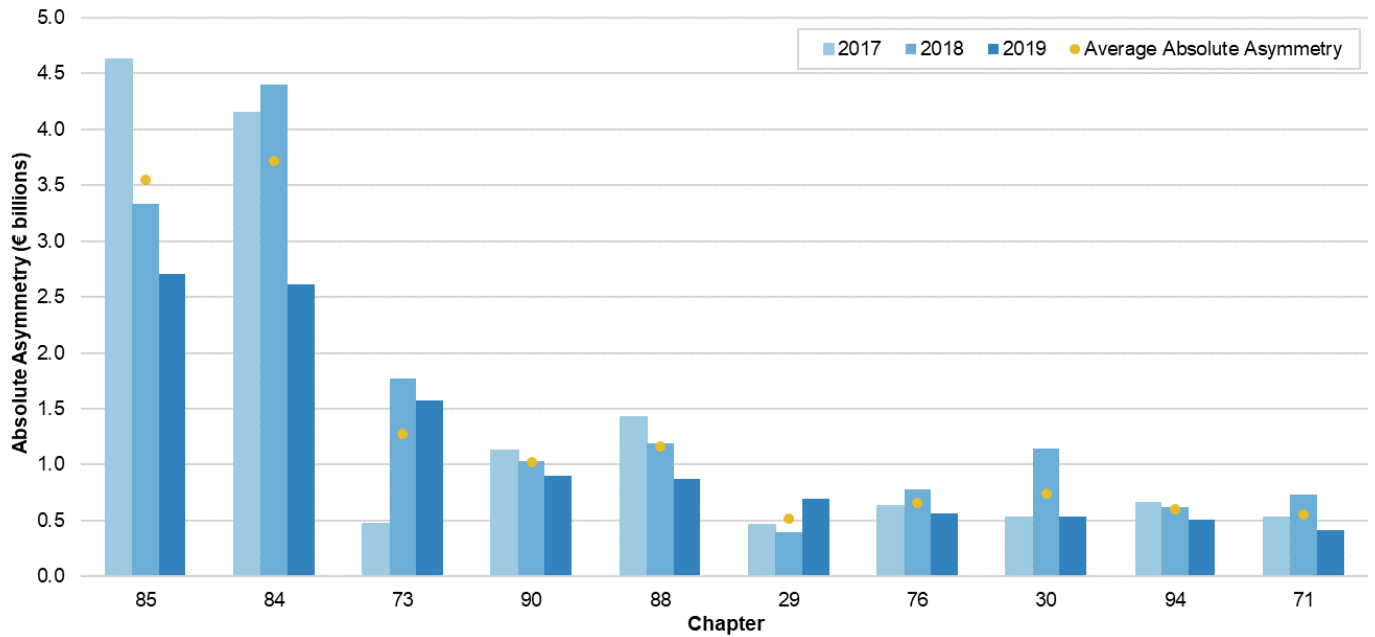
4.1.3. Arrivals: Average annual trade value compared with average absolute asymmetry between the UK and the rest of the EU by chapter, 2017-19

Graph 4.1.3 shows the top 10 chapters by average arrival value across the 3 years, each chapter's average share of the total value reported as arrivals by the UK, and their average share of the total absolute asymmetry for 2017 to 2019.

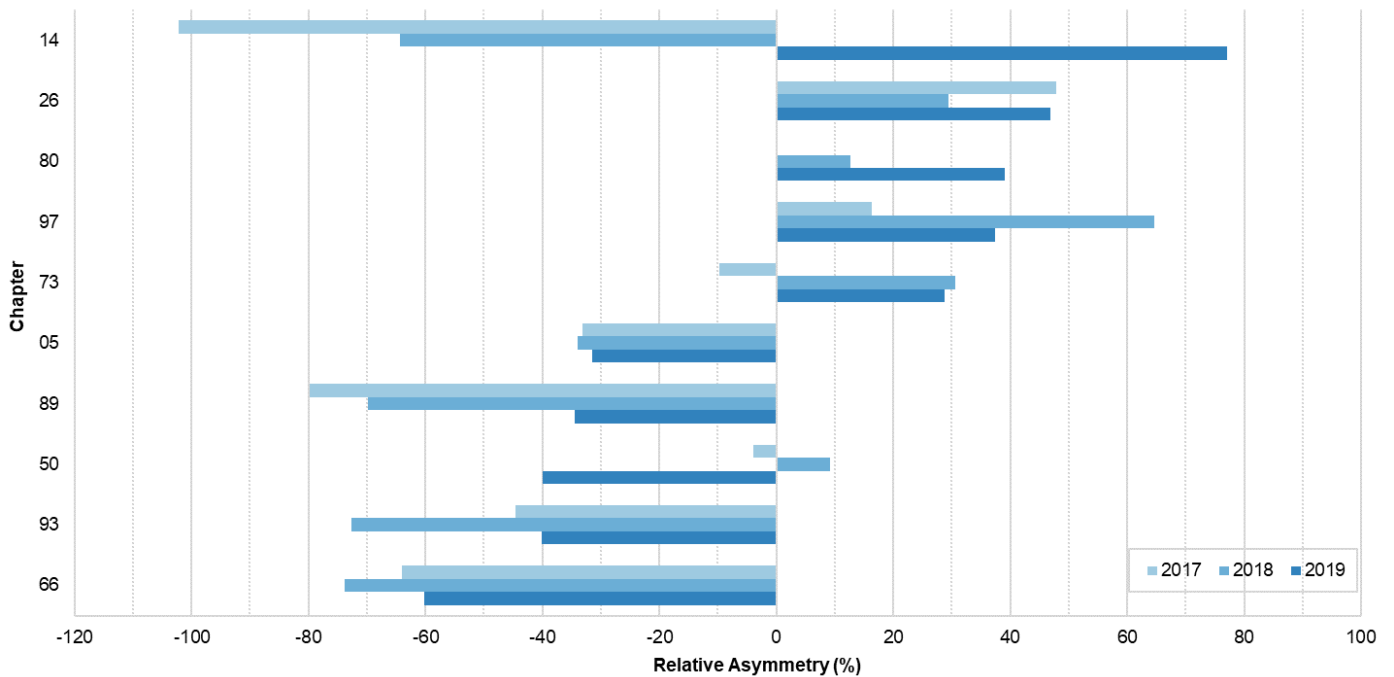
- Chapter 87 (Motor vehicles) had the largest average arrival value. On average, it contributed 18% of the total arrival value (€55 billion) but only 5.8% of the total absolute asymmetry (€1.4 billion).

- Chapter 84 (Mechanical appliances) had the 2nd largest average arrival value. On average, it contributed 12% of the total arrival value (€35 billion) but 15% of the total absolute asymmetry (€3.7 billion).
- Chapter 85 (Electronic equipment) had the 3rd largest average arrival value. On average, it contributed 8.4% of the total arrival value (€25 billion) but 15% of the total absolute asymmetry (€3.6 billion).
- Chapter 30 (Pharmaceutical products), on average, contributed 7.0% of the total arrival value (€21 billion) but only 3.1% of the total absolute asymmetry (€0.7 billion).
- Chapter 27 (Mineral fuels), on average, contributed 3.6% of the total arrival value (€10.8 billion) but only 0.2% of the total absolute asymmetry (€0.1 billion).

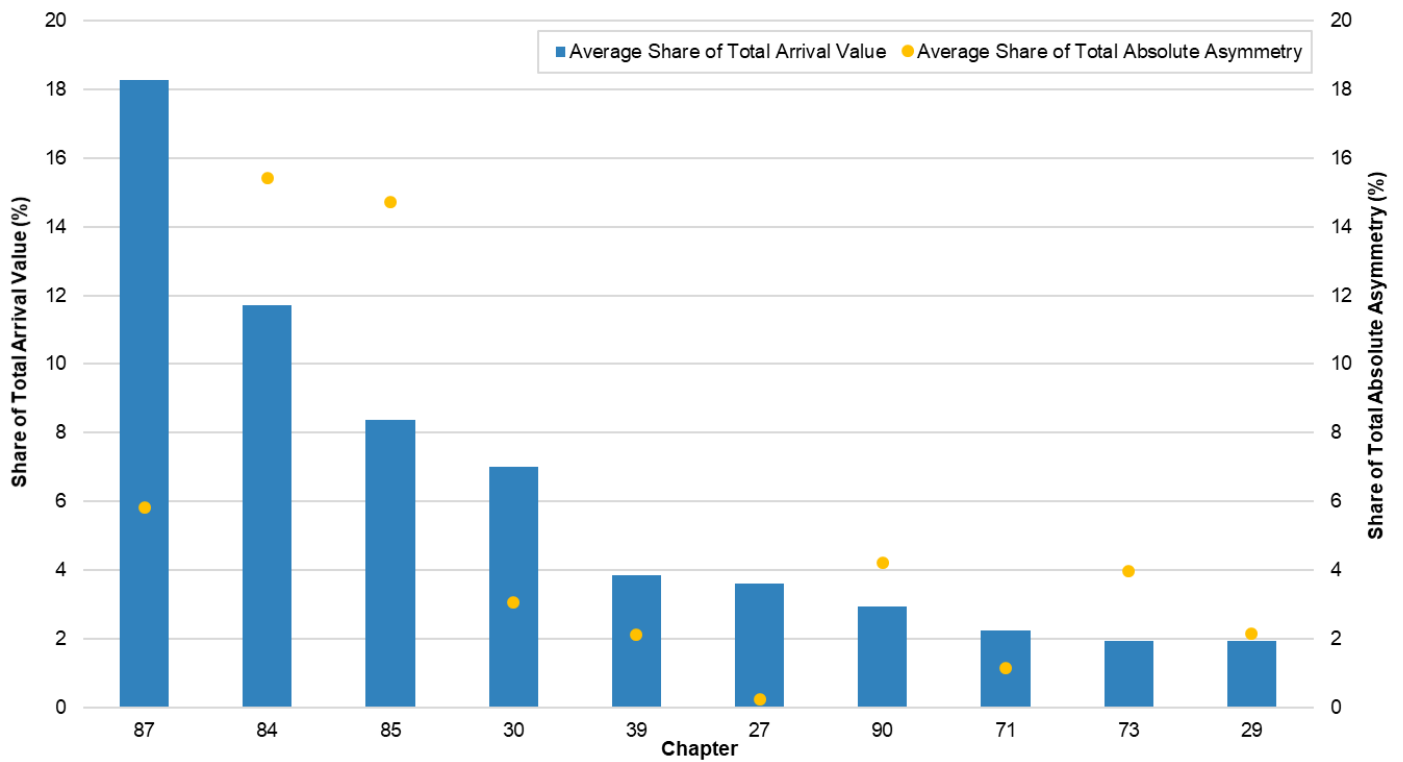
Graph 4.1.1. Arrivals: The UK's absolute asymmetries 2017-19 with the rest of the EU within its 10 largest chapters of 2019, sorted largest to smallest by 2019 arrival value.



Graph 4.1.2. Arrivals: The UK's relative asymmetries 2017-19 with the rest of the EU within its 10 largest chapters of 2019, sorted largest positive to largest negative by 2019 arrival value.



Graph 4.1.3. Arrivals: Share of average annual trade value compared with average absolute asymmetry 2017-19 between the UK and the rest of the EU within its 10 largest chapters of 2019, sorted largest to smallest by share of average annual trade value.



4.2.1. Dispatches: The UK's absolute asymmetries with the rest of the EU by chapter, 2017-19

Graph 4.2.1 shows the absolute asymmetries between the UK and the rest of the EU for the 10 chapters with the largest absolute asymmetries in 2019.

- In 2017, the total absolute asymmetry for all chapters was €21 billion. In 2018 this decreased to €20 billion. In 2019 this increased to €22 billion.
- Chapter 88 (Aircraft) had the largest absolute asymmetry in 2019 at €4.4 billion. It experienced an increase of less than €0.1 billion over the 3 years, also at €4.4 billion in 2017 and up from €3.2 billion in 2018.
- Chapter 85 (Electronic equipment) had the 2nd largest absolute asymmetry in 2019 at €4.1 billion. It experienced an increase over the 3 years, up from €3.9 billion in 2017 and €4.0 billion in 2018.
- Chapter 27 (Mineral fuels) had the 3rd largest absolute asymmetry in 2019 at €2.8 billion. It experienced the largest increase in absolute asymmetry over the 3 years, up from €0.9 billion in 2017 and €1.5 billion in 2018.
- Chapter 84 (Mechanical appliances) experienced the largest decrease in absolute asymmetry over the 3 years falling out of the top 10 at €0.2 billion in 2019. This is down from €1.1 billion in 2017, but up from €0.1 billion in 2018.
- Chapter 71 (Precious metals) experienced the 2nd largest increase in absolute asymmetry over the 3 years at €1.9 billion in both 2018 and 2019. This is up from €1.2 billion in 2017.

Table 4.2.1 shows the 10 chapters with the largest absolute asymmetries for 2017, 2018, and 2019. There were 8 chapters consistently in the top 10 through all 3 years, which were 88 (Aircraft), 85 (Electronic equipment), 27 (Mineral fuels), 71 (Precious metals), 38 (Miscellaneous chemical products), 94 (Furniture and light fittings), 62 (Clothes, not knitted), and 61 (Knitwear).

Table 4.2.1. Dispatches: Top 10 chapters by largest absolute asymmetries, 2017-19

Rank	2017	2018	2019
	Chapter	Chapter	Chapter
1	88	85	88
2	85	88	85
3	71	71	27
4	84	27	71
5	27	87	38
6	38	38	94
7	62	62	62
8	30	61	61
9	94	94	89
10	61	29	73

4.2.2. Dispatches: The UK's relative asymmetries with the rest of the EU by chapter, 2017-19

Graph 4.2.2 shows the relative asymmetries between the UK and the rest of the EU for the 10 chapters with the largest relative asymmetries in 2019.

- Chapter 80 (Tin and articles thereof) had the largest relative asymmetry in 2019 at -149%. This grew over the 3 years from -125% in 2017 and -137% in 2018.

- Chapter 14 (Other vegetable products) had the 2nd largest relative asymmetry in 2019 at -143%. This grew over the 3 years from -83% in 2017 and -1.1% in 2018.
- Chapter 24 (Tobacco) had the 3rd largest relative asymmetry in 2019 at -132%. This grew over the 3 years from -107% in 2017, though it reduced from -159% in 2018.
- Chapter 45 (Cork) experienced a notable change in its relative asymmetry over the 3 years. It was 25% in 2017 which changed to a negative relative asymmetry of -88% in 2018 and then reduced to -47% in 2019.
- Chapter 37 (Photographic products) experienced a notable growth in its relative asymmetry over the 3 years. It was -52% in 2017 which grew to -109% in 2018, and then reduced to -75% in 2019.
- Chapter 26 (Ores) experienced a notable reduction in its relative asymmetry over the 3 years. It was -112% in 2017 which reduced to -74% in 2018 and then grew to -93% in 2019.

Table 4.2.2 shows the 10 chapters with the largest relative asymmetries for 2017, 2018, and 2019. There were 5 chapters consistently in the top 10 through all 3 years, which were 80 (Tin and articles thereof), 24 (Tobacco), 26 (Ores), 37 (Photographic products), and 08 (Fruit and nuts).

Table 4.2.2. Dispatches: Top 10 chapters by largest relative asymmetries 2017-19

Rank	2017	2018	2019
	Chapter	Chapter	Chapter
1	80	24	80
2	26	80	14
3	24	37	24
4	14	45	26
5	88	26	37
6	08	47	47
7	67	08	88
8	53	71	08
9	37	50	57
10	57	53	45

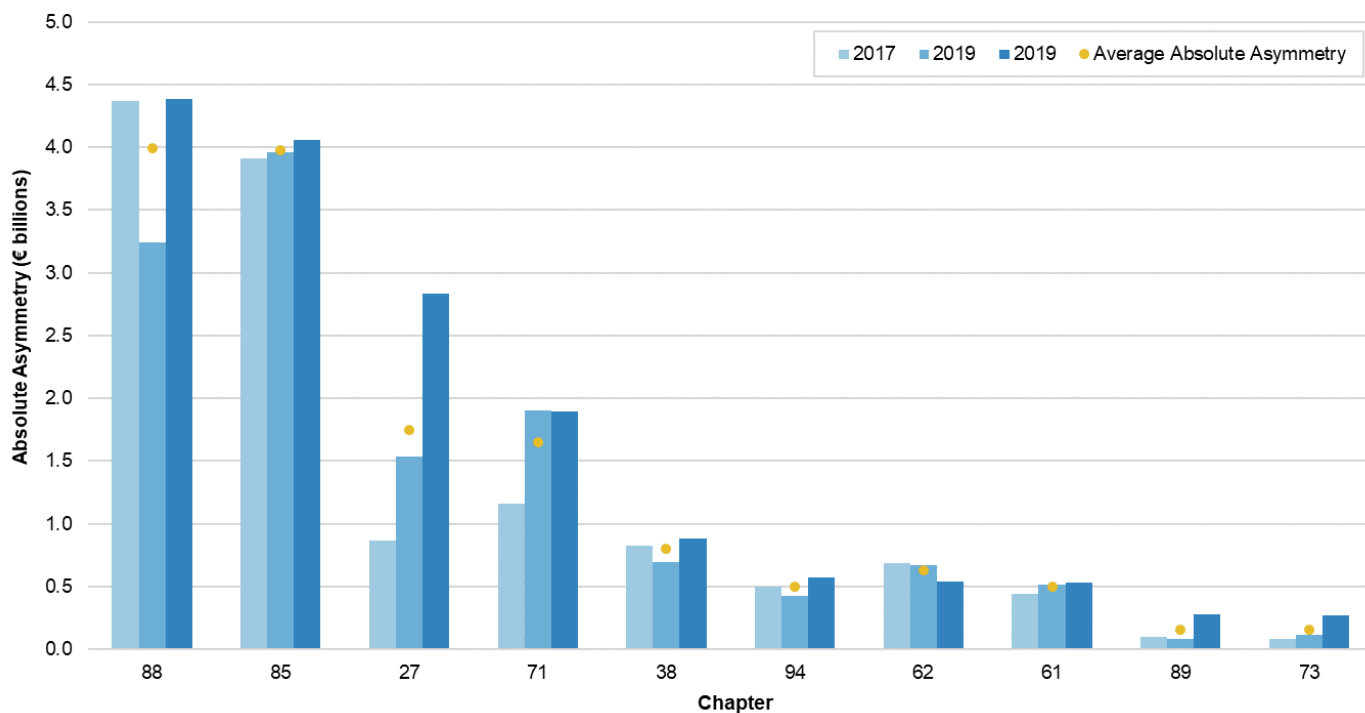
4.2.3. Dispatches: Average annual trade value compared with average absolute asymmetry between the UK and the rest of the EU by chapter, 2017-19

Graph 4.2.3 shows the top 10 chapters by average dispatch value across the 3 years, each chapter's average share of the total value reported as dispatches by the UK and their average share of the total absolute asymmetry for 2017 to 2019.

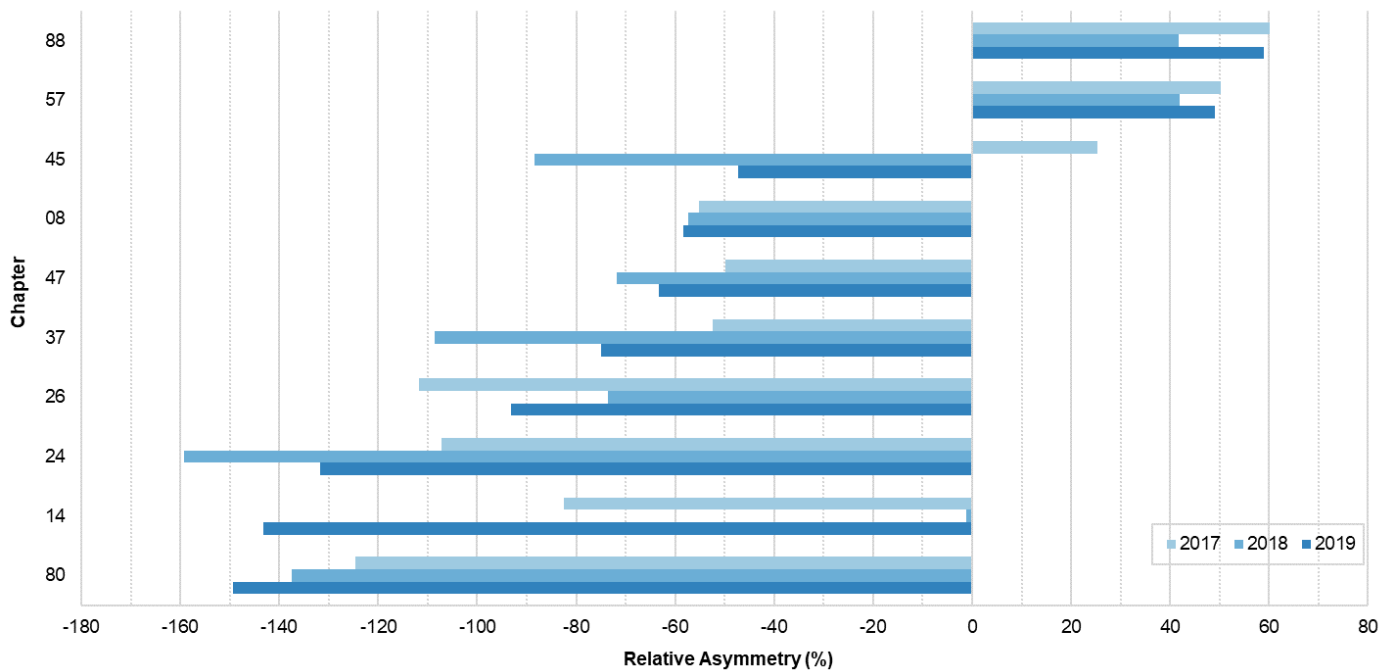
- Chapter 27 (Mineral fuels) had the largest average dispatch value. On average, it contributed 13% of the total dispatch value (€24 billion) but only 5.9% of the total absolute asymmetry (€1.2 billion).
- Chapter 84 (Mechanical appliances) had the 2nd largest average dispatch value. On average, it contributed 12% of the total dispatch value (€23 billion) but only 2.5% of the total absolute asymmetry (€0.5 billion).
- Chapter 87 (Motor vehicles) had the 3rd largest average dispatch value. On average, it contributed 11% of the total dispatch value (€21 billion) but only 2.1% of the total absolute asymmetry (€0.4 billion).
- Chapter 85 (Electronic equipment), on average, contributed 6.8% of the total dispatch value (€13 billion) but 20% of the total absolute asymmetry (€4.0 billion).

- Chapter 30 (Pharmaceutical products), on average, contributed 6.4% of the total dispatch value (€12 billion) but only 0.8% of the total absolute asymmetry (€0.2 billion).
- Chapter 88 (Aircraft), on average, contributed 5.0% of the total dispatch value (€9.5 billion) but 20% of the total absolute asymmetry (€4.0 billion).

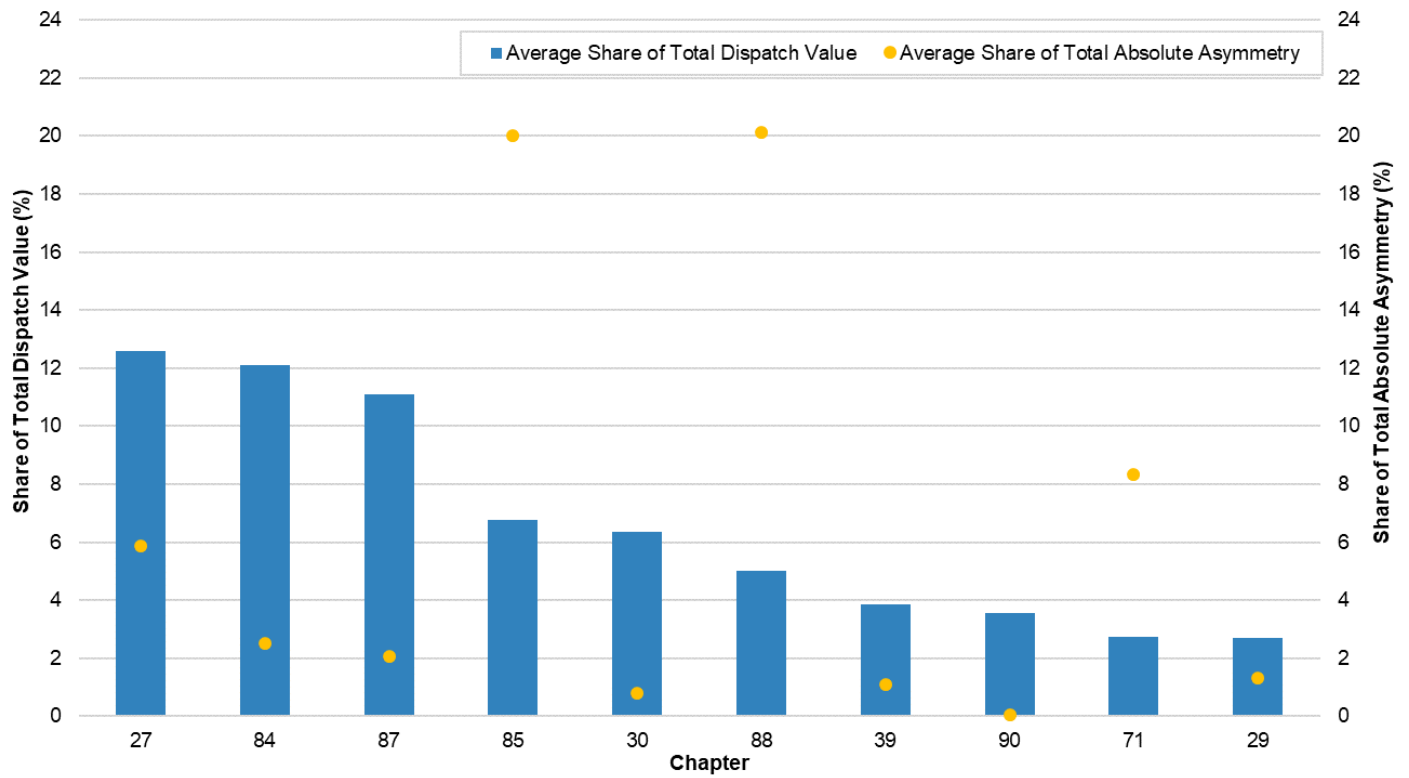
Graph 4.2.1. Dispatches: The UK's absolute asymmetries 2017-19 with the rest of the EU within its 10 largest chapters of 2019, sorted largest to smallest by 2019 dispatch value.



Graph 4.2.2. Dispatches: The UK's relative asymmetries 2017-19 with the rest of the EU in its 10 largest chapters of 2019, sorted largest positive to largest negative by 2019 dispatch value.



Graph 4.2.3. Dispatches: Share of average annual trade value compared with share of average absolute asymmetry 2017-19 between the UK and the rest of the EU within its 10 largest chapters of 2019, sorted largest to smallest by share of average annual trade value.



Annexe 1: Methodology

Annexe 1.1. Measures of Asymmetry

There are two types of asymmetries for trade in goods that are referred to in this report: the **arrivals asymmetry** and the **dispatches asymmetry**.

The **arrivals asymmetry** is the difference between the declarant country's arrivals from the partner country and the partner country's dispatches to the declarant country. If this asymmetry is positive it means that the declarant country's arrivals from the partner country are greater than the partner country's dispatches to the declarant country.

The **dispatches asymmetry** is the difference between the declarant country's dispatches to the partner country and the partner country's arrivals from the declarant country. If this asymmetry is positive it means that the declarant country's dispatches to the partner country are greater than the partner country's arrivals from the declarant country.

As an example, the UK's arrivals asymmetry with Germany is the difference between what the UK records as arrivals from Germany and what Germany records as dispatches to the UK. If the value of UK arrivals minus Germany dispatches is negative, it suggests that the UK is recording less goods as received from Germany, than Germany is recording as dispatched to the UK.

If we use D to represent the declarant country and P to represent the partner country, we can set out the main indicators used to calculate the asymmetry. Note that for the purposes of this report the UK will always be the declarant.

(1) Absolute Asymmetry:

$$= | \text{Value (D)} - \text{Value (P)} |$$

This is the absolute difference between the value of recorded by the declarant and their partner country (mirror value) irrespective of which is greater.

(2) Relative Asymmetry (%):

$$= \frac{\text{Value (D)} - \text{Value (P)}}{0.5 (\text{Value (D)} + \text{Value (P)})} \times 100$$

The relative asymmetry looks at the difference between the value reported by the declarant country and the value reported by the partner country with respect to the mean of those two flows. This method makes no assumption about which value (D or P) is the correct value and instead looks at the asymmetry with respect to the average of the two values shown in percent.

If a reporting country has a positive relative asymmetry, this means that they reported more trade than their partner country. If a reporting country has a negative relative asymmetry, this means that they reported less trade than their partner country. As relative asymmetry can be a positive or negative number, its change is expressed in terms of 'growth' and 'reduction' rather than 'increases' or 'decreases'. This is to focus on the number's distance from 0 rather than whether the value specifically went up or down.

For example, Country A reports €100 billion in arrivals from Country B while Country B reports €120 billion in dispatches to Country A. The relative asymmetry here is 18.2%. This means that, relative to the average between the two countries, they differ by 18.2%. Country A has reported 9.1% less trade than the average and Country B has reported 9.1% more trade than the average.

(3) Share of Total Absolute Asymmetry (%):

$$= \frac{| \text{Value (D)} - \text{Value (P)} |}{\sum | \text{Value (D)} - \text{Value (P)} |} \times 100$$

This percentage dictates the contribution a country or HS¹ Chapter is having on the absolute total of the asymmetries within a certain flow, e.g. Chapter 45 may be responsible for 10 per cent of the total UK arrivals asymmetry.

Annex 1.2. Chapter 99 Omission from Analysis and Adjustments

Chapter 99 was omitted from all analysis in Section 4 (A chapter breakdown of trade in goods asymmetries between the UK and its largest trading partners by trade value, 2017 to 2019). This is because it is used for different purposes by different countries and therefore does not represent an actual group of commodities being traded, but rather acts as a 'catch all' for suppressed or otherwise non-specified trade.

In cases where the sum of chapter totals did not match the overall reported total, these differences were adjusted into chapter 99 for consistency of totals. This is consistent with the methodology used in our Non-EU Asymmetries releases.

¹ HS Chapter as defined in the UN Comtrade database

Annexe 2: Chapter List

1	Live animals
2	Meat & edible offal
3	Fish and shellfish
4	Dairy produce and birds' eggs
5	Other animal products
6	Live trees, plants, and flowers
7	Edible vegetables
8	Fruit and nuts
9	Coffee, tea, and mate
10	Cereals
11	Milled products
12	Oil seeds and fruit
13	Vegetable extracts and resins
14	Other vegetable products
15	Animal or vegetable fats, oils, and waxes
16	Preparations of meat or fish
17	Sugars
18	Cocoa
19	Cereal preparations
20	Vegetable preparations
21	Edible preparations
22	Beverages
23	Animal fodder
24	Tobacco
25	Salt, sulphur, plasters, and clays
26	Ores
27	Mineral fuels
28	Inorganic chemicals
29	Organic chemicals
30	Pharmaceutical products
31	Fertilizers
32	Paints, inks, and dyes
33	Cosmetic products
34	Soaps, lubricants, and polishes
35	Glues, proteins, and starches
36	Explosives and pyrotechnics
37	Photographic products
38	Miscellaneous chemical products
39	Plastics and plastic products
40	Rubber and articles thereof
41	Hides, skins, and leather
42	Leather goods
43	Furs
44	Wood
45	Cork
46	Wickerwork and basketwork
47	Waste paper and wood pulp
48	Paper
49	Books and newspaper
50	Silk
51	Wool

52	Cotton
53	Other vegetable textile fibres
54	Man-made filaments
55	Man-made staple fibres
56	Wadding, rope, and cable
57	Carpets
58	Woven fabrics, lace, and embroidery
59	Coated fabrics and textiles
60	Knitted or crocheted fabrics
61	Knitwear
62	Clothes, not knitted
63	Other textile goods
64	Footwear
65	Headgear
66	Umbrellas
67	Feather and hair articles
68	Articles of stone
69	Ceramic products
70	Glass and glassware
71	Precious metals
72	Iron and steel
73	Articles of iron or steel
74	Copper and articles thereof
75	Nickel and articles thereof
76	Aluminium and articles thereof
78	Lead and articles thereof
79	Zinc and articles thereof
80	Tin and articles thereof
81	Other base metals
82	Tools and cutlery of base metal
83	Miscellaneous articles of base metal
84	Mechanical appliances
85	Electronic equipment
86	Trains and track fixtures
87	Motor vehicles
88	Aircraft
89	Ships, boats, and floating structures
90	Measuring devices and gauges
91	Clocks and watches
92	Musical instruments
93	Arms and ammunition
94	Furniture and light fittings
95	Toys, games, and consoles
96	Miscellaneous manufactured articles
97	Art and antiques
99	Other products